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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/057,133

01/24/2002

Andrew Storm

52637-0033

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29989

7590

02/16/2006

HICKMAN PALERMO TRUONG & BECKER, LLP
2055 GATEWAY PLACE
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SAN JOSE, CA 95110

EXAMINER

LU, JIA

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,133

Applicant(s)

STORM ET AL.

Examiner

Jia W. Lu

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 8-12, 17-21, 26-30 and 35-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-12, 17-21, 26-30 and 35-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The indicated allowability of claims 6, 7, 15, 16, 24, 25, 33 and 34 in the previous office action (in response to September 1, 2005 amendment), are withdrawn in view of the newly discovered reference(s) to US 6,243,414. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1-3, 8-12, 17-21, 26, 27, 37-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,834,109 and US patent 5,513,215, further in view of US 6,243,414.

- a. Regarding claims 1, 10, 19, 37, 42 and 47, patent '109 discloses a communications receiver including a time domain equalizer (figure 2, element 212), a frequency domain equalizer (figure 2, element 214), and updating means to update both time and frequency domain equalizers based on communication performance (figure 2, element 210). While patent '109 does not disclose a comparison of performance between two

sets of equalizer coefficients, patent '215 describes a comparison of performance of a first and second set of equalizer coefficients as means for its update mechanism (column 27, lines 50- column 28, line 2). While '215 discloses the claimed invention except that the two different sets of equalizer coefficients are used in a two equalizers instead of one, the systems are functionally equivalent to each other. It would have been obvious to one ordinarily skilled in the art to use a comparison between two sets of equalizer coefficients in an equalizer update mechanism as described in patent '109 to determine the best suited coefficients for varying data. ***Regarding the amended features "update bit allocation" in claim 1 and "perform gain adjustments" in claim 37, patent '414 shows these features in a receiver (figure 2, element 56), and it would have been obvious to one ordinarily skilled in the art to use this bit allocation update feature in the receiver disclosed in patent '109 in order to provide better gain control as well as distribution and combinations of tones (Column 4, lines 20-57).***

- b. Regarding claim 2, 11, 20, 38, 43, 48, patent '109 does not disclose an update mechanism using the updating of coefficients in the equalizer. However, patent '215 describes a receiver that uses the updating of coefficients as a part of equalizer updating process (abstract, lines 11-17). It would have been obvious to one ordinarily skilled in the art to use the

updating of coefficient as means for updating an equalizer as described in patent '109 to allow customization of equalizer properties.

- c. Regarding claim 3, 12, 21, 39, 44, 49, patent '109 does not disclose synchronization means in its equalizer update mechanism. However, patent '215 describes the use of pilot symbols as means for synchronization in its equalizer (abstract, lines 11-17). It would have been obvious to one ordinarily skilled in the art to use synchronization as part of an equalizer update mechanism like one described in patent '109 to ensure accuracy and uniformity of data reception.
 - a. Regarding claims 8, 17, 26, 40, 45, 50, patent '109 describes the receiver in a digital subscriber line configuration (column 1, line 42).
 - d. Regarding claims 9, 18, 27, 41, 46, 51, patent '109 describes the receiver as part of a discrete multitone system (column 7, lines 27-31).
2. Claims 28, 35, 36, 52, 55 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,834,109, US patent 5,513,215 and US 6,243,414, and further in view of US patent 6,418,558.
- e. Claims 28 and 52 inherits the limitation of claim 1 above. However, neither '109 or '215 explicitly describe its use in a computer-readable medium. Patent '558 describes an system including equalizers that is for data in a digital computer medium (column 10, lines 42-53). It would be obvious to one ordinarily skilled in the art to place equalizers with updating mechanisms in a computer-readable medium because the incorporation of

a computer into the system's operation allows for flexibility and efficiency in its implementation.

f. Claims 35 and 55 inherit the limitation of claims 8 and 40 above, respectively.

g. Claims 36 and 56 inherit the limitation of claims 9 and 41 above, respectively.

3. Claims 29, 30, 53, 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,834,109, US patent 5,513,215 and US 6,243,414 as applied to claims 28 and 52 above, further in view of US patent 5,513,215.

h. Claims 29 and 53 inherit the limitation of claims 2 and 38 above, respectively.

i. Claims 30 and 54 inherit the limitation of claims 3 and 39 above, respectively.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jia W. Lu whose telephone number is 571-272-6042.

The examiner can normally be reached on Mon- Fri, 10:30AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2634

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jia Lu
Examiner

A handwritten signature in black ink, appearing to read "Chieh M. Fan", with a stylized flourish at the end.

CHIEH M. FAN
SUPERVISORY PATENT EXAMINER